STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for non-project proposals:

Complete this checklist for non-project proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For non-project actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "propose" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **Rambo** *Agreement #:* **30-078510**

2. Name of applicant:

   Washington Department of Natural Resources

3. Address and phone number of applicant and contact person:

   Pacific Cascade Region
   601 Bond Road
   PO Box 280, Castle Rock, WA 98611-0280,
   (360) 577-2025.
   Contact person: Robert W. Johnson

4. Date checklist prepared: **11/21/2005**

5. Agency requesting checklist: **Washington Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **FY-2007**
   b. *Planned contract end date (but may be extended):* **Fy-2009**
   c. *Phasing:* **Does not apply**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain:

   Yes

   Timber Sale

   a. *Site preparation:* **Will be required in areas where high densities of undesired shrub and tree species may be present. The undesired species of concern are salmon berry and vine maple. The method for vegetation control will be determined after further evaluation from silviculturist during the planning phase of this activity. Mechanical site preparation is not anticipated to be necessary or viable for the proposed area.**

   b. *Regeneration Method:* **Artificial regeneration, by planting seedlings of mainly Douglas-fir.**

   c. *Vegetation Management:* **To be determined with vegetation surveys as areas artificially regenerated develop though out time.**

d. *Thinning:* **Silviculturist will assess PCT needs at approximately age 10 to 15. Stands will be evaluated for commercial thinning in the future.**

e. *Regeneration Harvest:* **Regeneration harvest will be assessed in 30-60 years.**

Roads: **Road maintenance assessments will be conducted annually and may include periodic ditch and culvert clean out, and road grading necessary. Any future new road construction will mainly be short spur roads to facilitate logging.**

Rock Pits and/or Sale: **A state owned rock source will be utilized for this project.**

Other: **Fire wood salvage of logging residue may occur following harvest. Direct sale of minor forest products may also occur.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available at region office.**
☐*Wildlife report:*
☐*Geotechnical report:*
☒ *Other specialist report(s):* **WA DNR state biologist available at the region office. Rambo Timber Sale Leave Trees/11/8/05**
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan:* **Included in the Road Plan of this proposal.**
☒ *Other:* **Forest Resource Plan (1992), Habitat Conservation Plan (1997), State Soil Survey, Planning and Tracking Special Concerns Report. WAU maps and HCP checklist. Available at region office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? **No**

10. List any government approvals or permits that will be needed for your proposal, if known.

☐*HPA* ☐*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit* ☒*FPA #* **2914400** ☐*Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

This proposal is a regeneration harvest project on a tract of forest composed of western hemlock and Douglas-fir. The gross area of this proposal is approximately 102 acres. Of this gross area, 34 acres is going to be set aside as no harvest areas in the form of RMZ's (Riparian Management Zones) and approximately 5 acres of Legacy Trees, which were marked as individuals or in clumps. The existing roads will reduce the acreage by 1 acre. The net area where timber removals will take place is approximately 62 acres. The proposals is near a Northern Spotted Owl Status 3 detection site and this proposal shares boundary with the boundary of the NSO circle Status III best of 70-acre core. This sale proposal stays out of the best 70 acre core habitat. The acreage of this sale proposal was adjusted to preserve the integrity of the best 70 acre core habitat.

Complete proposal description:

This proposal is a regeneration harvest of approximately 62 net acres of western hemlock forest type and the creation of riparian corridors and protection of older remnant trees in an area of a status III Northern Spotted Owl detection area.

No new permanent roads will be required to be built in this proposal. Landings, dry weather roads and skid trails will be built in the proposed areas. Maintenance and upgrading of the existent road system is included in this proposal.

An estimated 30% of the net harvesting area will be removed and felled mechanically. The remaining 70% will be hand felled and removed by a cable system. A portion of the proposal will need corridors over Type 4 RMZ's to facilitate yarding. Full suspension across said RMZ channels will be required.

Creation and development of a new forest stand with multiple use objectives. This part of the proposal potentially includes site preparation, artificial regeneration and vegetation management, all parts of this component of the proposal will require continued stand evaluation through time to determine most desired silvicultural treatment.

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

GENERAL FOREST STAND DESCRIPTION: The variables are mean values of the forest survey data.

1. STAND DESCRIPTION
The forest stand is a western hemlock/Douglas-fir stand currently at the initial stages of under-story initiation stage. At this stage individual trees are well differentiated and under-story vegetation has started developing in the lower strata of the forest canopy. This stratum is composed in its majority by western hemlock seedlings and small saplings. Large remnant trees are represented in the stand. The majority of which are Douglas-fir with a small representation of western hemlock. These large trees are dispersed randomly through out the proposal area. The mature trees have poor form and show evident signs of decaying. Their crowns show numerous dead limbs with no evident leader in the upper portion of it. Some had the characteristic "spiked" limb on the upper reaches of the crown. Most of the western hemlock mature trees appear to be in better condition than the Douglas-fir remnant trees.
The rest of the individuals that make up the current stand are a cohort of second growth trees of approximately 80 to 100 years. The unit has a hardwood component, which is located in the more hydric soils. These soils are located next to the stream channels and converging headwalls of the streams.

Timber Volumes: Average total timber volumes for the proposed timber sale are of 50 mbf per acre. The total volume of removals is of approximately 3,200 mbf for the proposed timber sale. Approximately 70% of the volume is western hemlock and the rest is Douglas-fir. A minor proportion of the total volume is red alder, accounting for 5 or 10 mbf for the entire proposed timber sale.

STAND MANAGEMENT OBJECTIVES-ECONOMIC RETURN TO TRUST

The net area of the unit where timber harvesting will take place is of approximately 62 acres. This will yield an approximate timber volume of 960 mbf of Douglas-fir and of 2,240 mbf in western hemlock.

2 HABITAT MANAGEMENT

Out of the 102 proposal acres of the forest management unit, 39 acres have been set aside for habitat management. These include the Riparian Management Zones, which directly contributes to the integrity of riparian ecosystems and indirectly to anadramous fish habitat. Approximately 4 acres have been protected in the form of legacy tree clumps and clusters of trees to protect and create habitat dependent on mature forest structures. Within the legacy trees clumps and clusters approximately 560 Legacy trees have been set-aside in the proposed area.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		**250**	**.00**	**0**
Reconstruction		**4000**		**0**
Abandonment		**250**		**0**
Bridge Install/Replace	**0**			**0**
Culvert In stall/Replace (fish)	**0**			**0**
Culvert Install/Replace (no fish)	**1**			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description: **Township 6N Range 2E Section 8 and 17.**

a. *Distance and direction from nearest town (include road names):* **From the town of Kalama, Exit 32 on Interstate 5, approximately 18 miles west on Kalama River Road to Weyerhaeuser road 6450. Then five miles on Weyerhaeuser 6450 and 6458 roads to proposal.**
From the city of Woodland, approximately five miles east on state route 503 and 3 miles on Little Kalama River Rd. to Aho-Carson Rd and end of county Rd, then approximately 6 miles on PH-1000 to PH-1300 to the proposal.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

WAU Name	WAU Acres	DNR WAU Acres	Sub-Basin Number	Sub-Basin Acres	Proposal Acres
Middle Kalama	**53,551**	**5084**	**31**	**1678**	**62**

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

This proposal is located in Middle Kalama WAU.

Private industrial forestland is located to the north and west of the proposal. Non-industrial private landowners mostly comprise the ownership of the area north of the unit and next to the Kalama river channel. The large industrial landowners that exist within the Middle Kalama WAU have conducted periodic thinning, and regeneration harvests.
There has been periodic harvesting on both state and private lands in and around the WAU.

Within the Middle Kalama WAU, effects of recent management practices may have slightly increased; 1) the peak flows of surrounding streams, 2) the frequency of mass wasting events, and 3) an increase in sedimentation (based on local knowledge and observations).

No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level.

Known and Observed WAU conditions:

Middle Kalama WAU:

Middle Kalama WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	**5,084**	**239**	**103**	**0**	**319**
PRIVATE OWNERSHIP	**48,467**	**4347**	**1092**	**UNKNOWN**	**UNKNOWN**
TOTAL	**53,551**	**4586**	**1195**	**N/A**	**N/A**

On State land additional even-aged harvests are anticipated within 2-3 miles from this proposal within the next three to five years.

There is evidence of both deep-seated and shallow failures within the WAU. Deep-seated failures range from small to those covering 10's of acres. Larger deep-seated slides are typically subdued by erosion indicating that little, if any, recent movement has occurred. Shallow features appear to be associated with poor road drainage.

Mitigation elements:

To minimize the chance of negative environmental impact, several mitigative measures are included in the proposal. Type 4 watercourses within the proposal area have been given buffer widths that comply with the 1997 Habitat Conservation Plan and the Forest Practices Rules. Type 4 waters have been buffered with a 100 foot no harvest RMZ. Both aforementioned buffer widths are horizontal distance measurements. Ground based equipment will be restricted to slopes less than 35%.

Haul routes for this proposal have been evaluated for potential impacts to the environment (primarily sediment delivery). To assure sediment delivery is controlled during active haul, multiple cross drains, sediment ponds, and other structures will be used to disconnect ditch water from live streams. Ditch water will be routed to the forest floor for filtering prior to entering live watercourses. Also, to preserve structural diversity for wildlife habitat, individual legacy trees, and wildlife tree clumps have been identified for retention throughout the proposal. A minimum of eight trees per acre has been retained to meet the above objectives. Following harvest, the site will be replanted with native species.

Cable yarding may require stringing cables through riparian management zones (RMZs) as part of this proposal, however no trees shall be cut or removed from the RMZ areas for this activity, excluding cable corridors located off spur A. Excluded are 6 corridors that will be needed for yarding access for the lower portion of the east finger of the proposal. Corridors prescriptions are mentioned below in the water section. A qualified geologist assessed the slope stability of the sale area both remotely and in the field. Based on the mitigation measures to be implemented, it was determined that the proposal would not substantially increase the potential for slope failures to occur.

Areas identified as of medium instability have been excluded from the area of direct timber harvesting operations and no road construction will take place in areas of potential instability. They have been identified within the RMZs

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐ Rolling, ☐Hilly, ☒Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone)

The Middle Kalama WAU is situated in the foothills of the Cascades and contains a variety of landforms. Rolling foothills are found at the lower elevations with steeper more mountainous terrain exhibited at higher elevations. Elk Mountain in the northeast portion of the WAU is the highest point at 4500 feet. Slopes vary from 0% to over 100%. Precipitation averages from 90 inches at the higher elevations to 50 inches in the lower elevations. Timber types dominant in the WAU include Douglas-fir, western hemlock, noble and silver fir, and red alder. The Middle Kalama WAU's major drainage is the Kalama River to the Columbia River

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

This proposal is located in the middle to upper elevations of the WAU, at approximately 1800 feet. The proposal is located on ridge tops and steeper slopes extending into the RMZs. The proposal does show historic signs of deep-seated instability. The proposal receives approximately 55 inches of precipitation a year and has approximately 15 acres located in non-managed rain-on-snow sub-basins.

b. What is the steepest slope on the site (approximate percent slope)? **65%**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
9406	**SILT LOAM**	**30-65**	**38**	**MEDIUM**	**HIGH**
6090	**GRAVELLY SILT LOAM**	**30-65**	**17**	**LOW**	**MEDIUM**
2485	**SILT LOAM**	**30-65**	**7**	**MEDIUM**	**MEDIUM**
6089	**GRAVELLY SILT LOAM**	**5-30**	**1**	**INSIGNIFIC'T**	**MEDIUM**

***Note, acres are gross acres for the proposal.**

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so describe

1) Surface indications:

A qualified geologist identified tracts of younger vegetation and exposed soils seen in aerial photos as evidence of shallow failures along a stream within and a stream adjacent to the proposal area. Some swept conifers and pervasively wet, oversteepening slopes were observed only on the lower slopes of the headwall of the eastern stream within the proposal area. This unstable area was excluded from the harvest area by establishing a leave tree clump that extends along the headwall down to the RMZ of the type 4 stream below. No indicators of deep-seated movement were observed in the immediate vicinity.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒ *Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

Evidence of shallow landslides having occurred under forested conditions is visible in both aerial photos and on the ground in the sub-basin. Shallow failures appear to initiate mostly in steeper tributary headwalls containing both convergent headwalls and hollows. Shallow failures also appear to occur on steep stream adjacent slopes where headwater streams are incised. Somewhat distinct to subdued deep-seated landslides are visible in the photos within the sub-basins lower in the WAU along lower reaches of the main stems of tributary streams. No indicators of deep-seated slides were observed in the sub-basin containing the proposed sale area.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒ *Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
Most management related failures appear to be associated with poor drainage on undersized culverts beneath older roads constructed across convergent headwalls or across the mid-slope on steeper side slopes. Photo evidence indicates that there is at least one debris slide initiated within young reprod from a hollow that may be part of a convergent headwall.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☒ *No* ☐ *Yes, describe similarities between the conditions and activities on these sites:*

The proposal area includes one headwall (eastern) area who's slope form is nearly that of a convergent headwall. These oversteepened, wet slopes have been protected by a leave tree clump. Although convergent the western headwall has no clear indicators of instability. Adjacent to the proposal, an apparent debris slide appears to have initiated in a hollow of a tributary headwall just below a road.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

- **No new road construction will occur across any sensitive slope including hollows or oversteepend wet slopes or within convergent headwalls.**
- **Potentially unstable slopes in hollows, headwalls, and steep stream-adjacent slopes have been bounded out of the harvest area by establishing leave tree areas and RMZs. RMZ's act as buffers and sediment traps should a landslide initiate up slope.**
- **Drainage control on existing and proposed spur roads will be replaced and/or installed such that culverts at crossings will be properly sized, installed, and maintained to avoid any diversion, concentration, and inappropriate discharge of surface runoff**
- **Landings and skid trails will be properly drained at the completion of operations to avoid ponding and/or concentration of runoff or discharge onto potentially unstable slopes. Landing debris will not be allowed to be perched above steep slopes.**
- **Severe ground disturbance will be avoided within sensitive slope areas by placing leave areas to limit the probability of yarding over those areas and by requiring lead end suspension on all cable settings except full suspension will be required when logs are flown over RMZs. Ground based equipment will only be allowed to operate on slopes <35% and only during dry conditions**

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **0.0** *Approx. acreage new landings:* **1.1** *Fill source:* **None**

f. Could erosion occur as a result of clearing, construction, or use? Erosion may occur in areas where new construction is planned.

Yes, some incidental erosion may occur as a result of this proposal, but should be confined to associated roads and harvest areas. See B.1.h for mitigation.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Less than 1% of the project site will be in permanent rocked running surface.

h. Propose measures to reduce or control erosion, or other impacts to the earth,:
i.

<u>Site Protection Measures</u>

- **The harvest area is designed to minimize impacts to soil and water by assuring adequate suspension such that minimal ground disturbance will occur during cable yarding.**
- **Harvest area boundaries have been located away from the larger stream draws, and the steeper slopes above streams have been excluded from the harvest area.**
- **Storm water runoff will be collected by road ditches and diverted through cross drain culverts onto the forest floor.**
- **Dissipaters are placed at culvert outlets to reduce sedimentation and control erosion.**
- **Grass seed and straw bales will be placed on exposed areas as deemed necessary by the Contract Administrator to prevent and control erosion.**
- **Water bars will be constructed across haul roads, skid trails and fire trails as necessary to control soil erosion.**
- **Areas of instability removed from the sale proposal area.**

Protection measures to reduce erosion associated with roads:

- **Seasonal timing restrictions will be used to minimize road construction activities during wet weather conditions.**
- **Soils exposed during road construction, including any waste areas, will be treated with erosion control measures, such as grass seed or straw.**
- **Roads will be maintained as needed to control water runoff and avoid delivery of sediment to live water.**
- **Drainage structures will be properly installed and maintained.**
- **Sediment control measures will be used as necessary during active haul to prevent sediment delivery to water.**
- **Timing restrictions or temporary road shutdown will be used as necessary during active haul to prevent sediment delivery to water.**
- **Periodic maintenance and inspection of the road system to insure proper function.**

Protection measures to reduce erosion associated with active logging operation:

- **Ground-based yarding will be restricted to slopes less than 35%.**
- **Cable yarding areas will maintain lead-end suspension and will be required on slopes greater than 35%.**
- **Ground yarding restrictions will be required to minimize soil impacts, including compaction and rutting.**
- **Skid trails will be water barred as necessary to minimize erosion and sediment delivery to live water.**

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known. On the entrance road where easement exist with small private land owners with dwellings near the harvest site, watering of the main entrance road during the dry season might be necessary to reduce dust during hauling operation in summer.

Minor amounts of engine exhaust from logging equipment and dust from vehicle traffic and logging equipment.

b. Are there any off-site sources of emissions or odor that may affect your proposal? **None**

c. Proposed measures to reduce or control emissions or other impacts to air. **None**

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

a) Downstream water bodies:

Yes, there are two type 3 streams outside the proposal area that are fed by the below mentioned type 4 waters; Arnold Creek to the North and an unnamed stream to the South. Both flow directly into the Kalama River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed	Type 4	3	100

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

No wind buffers needed for the silvicultural prescription because there is a low risk of blow down. Marked and tagged buffers for the RMZ's within and outside the boundaries of the unit under management:

- **Type 4 streams buffered at least 100 feet**
- **Timber felled and yarded away from streams where possible.**
- **No equipment will operate within RMZs.**
- **Timber felled for corridor yarding access will remain where felled**
- **Corridors will be restricted to 24 feet in width, and full suspension will be required over and within 100 feet horizontal distance from channel.**

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒ *Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts):

Falling and yarding will occur within 200 feet of two type-4 streams.. Cable lines for tail holds concurrent with cable yarding operations may be strung through type-4 RMZs, but no harvest of trees. Approximately 6 yarding corridors will be needed across one type-4 stream for cable settings located off the 6458A-1 road. The corridors will be restricted to 24 feet in width, and shall have all cut timber remain within the corridor. The corridors will not run across the stream channels of type 4 streams and are required to have the 24' width to accommodate for cable deflection, yarding distance and the length of the logs. This 24' corridor width will prevent the incoming logs from being snagged on their way to the landing and prevent stress on the cable system and will also provide for safety in the harvesting operations.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒ *No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒ *No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒ *No* ☐*Yes, type and volume:*

7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

The potential for surface and/or mass wasting does exist within the sub basins, mostly in headwalls with steep slopes and/or where unstable soils are present. Most of these sites occur near watercourses with deeply incised channels and steep headwall areas.

Soils, as indicated by the state soil survey are shown as having medium and high soil erosion potential. Mass wasting potential for the proposal was characterized as insignificant or medium for the dominant soil.

There is little potential of eroded material to enter surface water due to the size and location of Riparian areas surrounding live watercourses. Ditch water will be diverted to the forest floor.

8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐*No*☒ *Yes, describe changes and possible causes:*

The changes in the channel location and sediment deposition have occurred due to localized instances of surface erosion. Locally, channels have changed locations as the consequences of bank erosion and subsequent sedimentation occurring mostly during peak flows.

9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☐ *No* ☒ *Yes, explain:*

This proposal is expected to have minimal to no effect on water quality. Items listed in B.1.h. above and B.3.d. below will minimize potential sediment delivery to streams. These mitigation elements should limit affects on water quality in relation to the items of concern revealed in questions 1-8 above.

10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒ *No* ☐*Yes, describe:*

There are approximately 5 miles per square mile in the Middle Kalama WAU and 4.0 miles per section in sub-basin 31.

This proposal is consistent with forest practice rules and ditches are not known to intercept sub-surface flow and do not deliver surface water to streams. Elsewhere in the WAU there are cases of ditches intercepting subsurface flow evident in the WAU and sub-basin. Ditch water relief culverts have/will be installed that allow water to drain and filter onto the forest floor away from live stream waters.

*11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒ *No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☒*No* ☐ *Yes, describe observations:*

14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact

This proposal may slightly change the timing/duration/amount of peak flow; flow rates may increase slightly during low flow periods during the first decade of the new forest.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☐*No* ☒ *Yes, possible impacts:*

There is a Washington Department of Fish and Wildlife (WDFW) hatchery located 13.6 miles downstream on the Kalama River. With the protection measures proposed, no work associated in any typed water, and low risk of reinitiating historic unstable areas, there is to be minimal to no downstream effects.

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

The proposal area will be subject to regeneration harvest and peak flows might temporarily increase due to the cessation of water absorption by the trees. However, existing under-story vegetation will soon recuperate from the exposure to full sun and active growth that will require absorption of water and therefore help to reduce the overland flow of water. The infiltration capacity in this area will be functional, as soil organic matter will increase, which will slow down the overland flow of water. General soil structure will not change, which will allow for the percolation of the excess water. The RMZ's will function as buffers that will complement the effectiveness of the harvest areas as receptors and retainers of any possible overland and subsurface flow that may occur within this proposal. Road location, design, and drainage feature location will aid in runoff diversion and energy dissipation to allow for increased soil infiltration, thus helping to minimize peak flow impacts.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Minor amounts of oil fuel and other lubricants may be inadvertently discharged on to the ground as a result of heavy equipment use. No lubricants will be disposed on site.

3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?
☐*No* ☒ *Yes, describe:* **Kalama River WDFW Hatchery**

a) Note protection measures, if any.

See questions 3.A.1c and 3.A.10 for protection measures for streams and runoff waters.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters?

Storm water flow will be diverted from logging roads and landings to ditches. Ditches will force water to flow into culverts. The culverts will direct the flow of water onto stable areas of the forest floor. If needed, energy dissipaters will be constructed to slow the flow and force of the runoff.

2) Could waste materials enter ground or surface waters?

Yes, surface waters may transport minimal amounts of logging slash.

a) Note protection measures, if any. **Fell and yard timber away from streams.**

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a. Seeding and mulching areas where mineral soil are exposed due to frequent use of logging equipment and hauling vehicles. Creation of water bars and silt traps and placement of culverts in designated points for collection of run off water from ditches to direct water flow into vegetated areas to facilitate infiltration and filtering of sediments. The RMZ's will function as buffers that will help reduce and filter sediment from any possible overland and subsurface flow that may occur within the areas mentioned in this proposal.

4. Plants

a. Check or circle types of vegetation found on the site:
☒ deciduous tree: ☒ alder, ☒ maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☒ other: Cascara, Vine Maple
☒ evergreen tree: ☒*Douglas-fir,* ☐ *grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,*
☒ *western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,*
☒ *red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒ *salal,* ☐*other: Ocean spray, Oregon grape, Blueberry,*
☐grass
☐pasture
☐crop or grain
☒ wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒ skunk cabbage, ☒ *devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☒*plant communities of concern:* **See b.1 below**

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

100% of the volume of the conifer species and hardwoods within the sale boundary tags will be removed, with the exception of the wildlife reserve and green retention trees. All trees with old growth characteristics will remain in the proposal area as retention trees or down woody debris. Alteration of shrubs and ground vegetation will occur during the course of harvest activity.

1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")*

The proposal is located within a stand that scored high on the Weighted Old Growth habitat Index (WOGHI). The stand was assessed (available at Region) and determined to not be old growth, but is in an older forest stand development stage. Parts of the proposal are within the structurally complex or botanically diverse stand development stages. This proposal does not lie within an area managed for older forests.

2) *Retention tree plan:*

Retention trees on the proposal are located in various configurations to capture unique current forest structure and also allow for distribution across the proposal area to provided perch trees for birds of prey and neo-tropical migrators. Two large clumps were implemented across the proposal. The one to the north and west of the proposed area has approximately 110 trees. The second large clump has approximately 140 trees in it. The rest of the legacy trees are clumped, clustered or left standing individually with in the area proposed for regeneration harvest. In addition trees standing in the area of medium soil instability potential have been excluded from the harvesting area. They have been incorporated with RMZ buffers. On the ground-based harvest portions of the sale, approximately 200 trees were marked as individuals or groups of 12-20 trees. There are remnants found on the proposal and were marked as leave trees or left in consolidated leave trees areas. There will be a minimum of 8 leave trees per acre, consisting of conifer and hardwood species for green tree and snag recruitment, left clumped and scattered within the units.

c. List threatened or endangered *plant* species known to be on or near the site.
None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Following harvest the site will be re-planted with Douglas-fir seedlings. Also, the leave tree design for this sale will utilize scattered clumps that will protect unique trees. There may be plantation maintenance activities throughout the first 3-5 years of the stands life to control competing vegetation. Leave trees will also assist in natural regeneration of the proposal area.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒ hawk, ☐heron, ☐eagle, ☒ songbirds, ☐*pigeon*, ☒ other: Ruffed Grouse
mammals: ☒ deer, ☒ bear, ☒ elk, ☒ beaver, ☒ other: bob cat, cougar, squirrel, chipmunk.
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

The department's TRAX data indicates a status 3-owl circle within the vicinity of the proposal. The proposal is located within the status 3 northern spotted owl management circle. This proposal is not within the best 70 acre core so no timing restrictions are necessary. The DNR has an HCP northern spotted owl strategy that requires no further protection measures. This circle is not located within the NSO dispersal or nesting, roosting, and foraging areas.

This proposal is located within Evolutionarily Significant Units for Lower Columbia River Chinook, Steelhead, and Columbia River Chum. Our HCP Strategy and RMZs should protect potential salmonid habitat.

c. Is the site part of a migration route? No
☒ *Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway. The area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. While migrating through Pacific Northwest forests, many Neotropical birds are closely associated with riparian areas, cliffs, snags, and structurally unique trees. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.

d. Proposed measures to preserve or enhance wildlife, if any:

In the area proposed for regeneration harvest there will be an increase of LWD that will provide cover and habitat to a wide range of wildlife. The increase in the diversity of plants species during the early successional stage of the regeneration harvest site, will allow for animal species to forage, feed on berries, flowers and small seeds and will provide opportunities for predator species to prey on species that use the regenerated area.
The Riparian Management Zone will provide corridors that will allow safe movement of animal and plant species in the landscape as well as contribute LWD and shade to the waterways buffered in the Riparian Management Zone as well as perching and nesting sites for avian communities.

1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*

Species /Habitat: **Northern Spotted Owl**	Protection Measures: **Proposal is outside best 70 acres**
Species /Habitat:	Protection Measures:
Species /Habitat:	Protection Measures:

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. **Does not apply**

b. Would your project affect the potential use of solar energy by adjacent properties? **Does not apply**

c. What kinds of energy conservation features are included in the plans of this proposal? **Does not apply**

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, which could occur as a result of this proposal?

There is a small risk of exposure to heavy equipment exhaust, and the potential for minor spillage of fuel and lubricating oils during harvest operations. .

1) Describe special emergency services that might be required.

A wildfire would require response from Department of Natural Resources, private and rural fire department fire suppression resources. Medical emergencies would require medical or air ambulance resources. Hazardous material spills may require Department of Ecology and/or county assistance.

2) Proposed measures to reduce or control environmental health hazards, if any:

No oil or lubricants will be disposed of on site. The cessation of operations may occur during periods of time when the risk of fire may increase. Fire tools and equipment will be kept on site during fire season. In the event of a lubricant spill the Purchaser will contact the DNR and the Department of Ecology. Operations will cease if relative humidity falls below 30%.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? **None**

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Heavy equipment, chain saws, yarding whistles and trucks will produce noise during periods of operation.

3) Proposed measures to reduce or control noise impacts, if any: **None**

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Timber production, Forest management.

b. Has the site been used for agriculture? **No**

c. Describe any structures on the site. **None.**

d. Will any structures be demolished? **Does not apply.**

e. What is the current zoning classification of the site? **None for Cowlitz County**

f. What is the current comprehensive plan designation of the site? **Forest Land**

g. If applicable, what is the current shoreline master program designation of the site? **None**

h. Has any part of the site been classified as an "environmentally sensitive" area? **None**

i. Approximately how many people would reside or work in the completed project? **None**

j. Approximately how many people would the completed project displace? **None**

k. Proposed measures to avoid or reduce displacement impacts, if any: **None**

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

All areas of this proposal will remain as commercial forestland.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. **None**

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. **None**

c. Proposed measures to reduce or control housing impacts, if any: **None**

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed? **N/A**

b. What views in the immediate vicinity would be altered or obstructed?

1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☒ *No* ☐*Yes, viewing location:*

2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☐*No* ☒*Yes, scenic corridor name:* **Kalama River Road**

3) *How will this proposal affect any views described in 1) or 2) above?* **None. Timber harvest is a common view within the landscape.**

c. Proposed measures to reduce or control aesthetic impacts, if any:

The variety of vegetation patterns will mitigate the uniformity created in the vegetation on the stand replacement units.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? **None**

b. Could light or glare from the finished project be a safety hazard or interfere with views? **None**

c. What existing off-site sources of light or glare may affect your proposal? **None**

d. Proposed measures to reduce or control light and glare impacts, if any: **None**

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Informal uses
- **Hunting**
- **Nature Watching**
- **Mushroom gathering**
- **ATV and Motorcycle trails *NOTE: These trails are not DNR designated and are informal.**

b. Would the proposed project displace any existing recreational uses?

Permanent or temporary ATV and Motorcycle trails will be obstructed and blocked permanently. These trails are not managed by the DNR. The blocking is necessary to protect the plantation.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: **ATV use is not sanctioned by DNR on plantation grounds.**

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe. **None**

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site. **None**

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

None.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

See A.12.b,

1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?* **None**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? **No.**

c. How many parking spaces would the completed project have? How many would the project eliminate? **N/A**

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Forest roads accessing the site of proposal will be improved.
A temporary spur road will be created during the harvesting operations of this proposal.

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?* **None**

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. **None**

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

During harvest, 15-20 vehicle trips per day may occur. This will take place for three to four months. Upon completion of harvest activities, traffic will revert to previous levels.

g. Proposed measures to reduce or control transportation impacts, if any:
h.

None

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.
c.

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None

Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: César Guidotti Carrión Forester Date: _____
Title

Reviewed by: Randy Kirk for Ronn Schuttie Date: _____
State Lands Assistant Manager

Comments: _____